

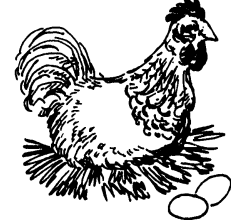


The University of Georgia

**Cooperative Extension Service**

College of Agricultural and Environmental Sciences / Athens, Georgia 30602-4356

MAY 2008



## COMMERCIAL EGG TIP . . .

### DIFFICULT PHOSPATE SITUATION

As has been obvious to everyone, the price of feed phosphates has undergone an almost incredible increase. A number of reasons can be cited for this, including: increased fertilizer needs to support the levels of corn production stimulated by ethanol policy, a worldwide shortage of sulfuric acid needed for some phosphate manufacture, and the extraordinary energy needs for producing of defluorinated phosphates. Whatever the reason, the tripling (possibly quadrupling) of price has demanded the immediate attention of poultry producers. There are several points to consider when developing a strategy in response to the high phosphate prices.

1. Reduction in dietary phosphorus: Nutritionists traditionally include a margin of safety for all important nutrients, so as to protect against deficiencies should unexpected variations occur in feed ingredient quality, uniformity of mixing, etc. As it has become prohibitively expensive to continue to use wide margins of safety, available phosphorus (AP) levels more closely approximating the actual requirement are now being used. A danger here is that research studies to determine the AP requirement of laying hens are generally conducted under “research” as opposed to “commercial” conditions. Thus, a level of phosphorus adequate for one or two birds per cage might be deficient for the most timid hen in a cage of five, which may be eating less feed than it’s cage mates. That is, the experimentally determined phosphorus requirement might be adequate for only four of the hens in a five bird cage. In this case, 20% of the flock might become phosphorus deficient.
2. Use of phytase: At this stage, one can almost say it would be professionally irresponsible not to use phytase. It has been proven to be an effective enzyme available to feed producers at reasonable prices. The question is, how many phytase units to use per pound of feed, and, as a consequence, how much the AP requirement can be reduced? It has long been known that levels of phytase higher than those previously recommended can give additional benefits in phosphorus availability. Obviously, there is a decreasing return, but the lower price of today’s phytases make this option very attractive. Instead fo the 0.08% - 0.10% reduction in AD with phytase use suggested in previous years, one now hears recommendations of decreases of 0.12% AP. Each nutritionist must consider research data when determining how much phosphorus high levels of phytase can actually spare.

#### PUTTING KNOWLEDGE TO WORK

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3. Phosphorus in DDGS: It is now commonly recognized that the phosphorus in DDGS is much more available than that in the original corn. This is presumably because microbes involved in the fermentation of grains also synthesize a certain amount of phytase for their own use. Corn grain contains about 0.25% total phosphorus, and DDGS about 0.85%. However, whereas the phosphorus in corn is only 1/3 available, this rises to approximately 2/3 in DDGS. This contribution should not be ignored when formulating feeds containing DDGS.
4. Phosphorus Deficiency: Be alert to marginal deficiencies. While severe phosphorus deficiencies are not difficult to detect, this is not the case with marginal deficiencies. In the commercial layer industry, with multiple birds per cage, any increase in leg or skeletal problems, or modest change in performance or shell quality, should be very seriously investigated. This may indicate we have been too aggressive in either reducing AP levels, estimating the contribution of phytase, or experiencing some other problem. Given the high price and possible shortage of high quality feed phosphates, the likelihood of field deficiencies has increased. At present, poultry producers must certainly be aggressive in establishing proper levels of phosphorus in feeds, but simultaneously be very aware of deficiency symptoms.
5. Worst Case Scenario: It would be extremely risky to simultaneously reduce the assigned AP minimum while increasing the estimated impact of phytase. If we make multiple changes at the same time, it is far more difficult to pinpoint the cause of possible resulting problems.



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**\*\*Consult with your poultry company representative before making management changes.\*\***

“Your local County Extension Agent is a source of more information on this subject”